

The Innovation vs. Technical Debt Tug of War

Technology leaders are exploring new ways to drive innovation and maximize the value of IT in a changing world driven by disruption and a need for acceleration.

GLOBAL TECHNOLOGY EXECUTIVE SURVEY

Technical Debt and Innovation Trends in Manufacturing and Distribution

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By the numbers: Overall, organizations today spend an average of 30% of their IT budgets on and invest a fifth of their IT human resources in technical debt management.

- This research, based on a global survey of more than 1,000 CIOs, CTOs and other technology leaders, underscores the burden created by technical debt and likely is an eye-opener for those in many different business segments.
- Not surprisingly, these numbers trend higher for manufacturing and distribution organizations.

But there's good news: Manufacturing and distribution organizations, which tend to lag other industries when it comes to innovation and digital transformation, are breaking out of this stereotype. Our research reveals that more than three out of four companies in the manufacturing and distribution industry group – 78% – have clearly defined innovation goals, and for manufacturers specifically, that number leaps to 93%.

Key takeaway: More manufacturing and distribution organizations are adopting an innovation mindset.

Innovation – overcoming challenges starts with leadership

The big picture: Focusing on innovation in manufacturing and distribution organizations is often beset by specific challenges, such as legacy technology systems, the distributed nature of manufacturing, lack of integration between disparate systems, and hiring and training skilled staff in nonurban locales.

- Addressing these challenges and achieving greater progress in innovation and transformation initiatives often comes down to designating innovation leaders – our

research shows that in manufacturing and distribution organizations, roles such as a chief innovation officer or chief strategy officer are less prevalent than in other industries.

- Globally, 47% of industries have these specific roles in place, while in the manufacturing and distribution industry group the incidence of such officers drops to 34%.

Why it matters: Our research indicates that within manufacturing and distribution organizations, responsibilities for technology innovation and transformation fall under the purview of the CIO or CTO.

- With a higher percentage of CIOs and CTOs addressing innovation and transformation efforts, there may be an impact on the ability to execute on those initiatives since CIOs and CTOs have their plates full with other day-to-day “running the business” responsibilities. It’s important to ensure that the organization has the appropriate resources under the CIO or the /CTO to advance innovation programs while managing day-to-day technology operations.

Mitigating technical debt, embracing new technologies

Good news: Manufacturing and distribution organizations, like most companies worldwide, are showing interest in and embracing innovation and emerging technologies.

- **A majority of manufacturing and distribution organizations (54%)** have a dedicated lab or think tank that focuses on innovation, which is on par with most organizations globally.

Yes, but: Technical debt often represents a significant roadblock to deploying emerging technologies, and it takes a particular toll in manufacturing and distribution:

- **70%** of manufacturing and distribution **organizations report** that technical debt has a substantial impact on their ability to innovate.
- **Close to half (46%)** cite their current solution architecture as an impediment to innovation, compared with 37% of all organizations.
- **34% of IT budgets** (versus 31% among all organizations) and 20% of IT human resources are dedicated to technical debt management.

Some greater context: The increased burden of technical debt in manufacturing and distribution organizations makes sense since they must deal with many disparate technology solutions across multiple locations to meet their needs, and they are also limited in skilled resources to manage and mitigate technical debt.

Leaning on tech for help: Manufacturing and distribution organizations are using a number of technologies to help reduce or alleviate their technical debt:

- **68%** use Internet of Things-related technologies (compared with 63% of all organizations)
- **36%** use edge computing (compared with 32% of all organizations).
- **44%** use artificial intelligence and machine learning (compared with 39% of all organizations).

In closing

While the manufacturing and distribution industry segment faces challenges that are different from other industries and often unique, innovation and transformation, along with the mitigation of technical debt, are top priorities for their technology leaders, which is good to see. These executives and leaders should continue to explore and accelerate new ways to fuel innovation throughout their organizations.

However, many roadblocks remain, not the least of which is the burden of technical debt, which hampers the organization's ability to innovate and grow.

Technology executives will need to partner with their executive counterparts to ensure the enterprise is innovating in a responsible way and with a proper focus on internal controls. In addition, technical debt management should be a top-of-mind issue, and both technology and finance executives should lead in addressing technical debt and spearhead efforts to reduce its long-term burden on the organization.

About the Global Technology Executives Survey

Protiviti surveyed more than 1,000 CIOs, CTOs, CISOs and other technology executives and leaders (n = 1,050) to ascertain the status of several concepts around innovation and technical debt across numerous regions, business types, revenue classes and management roles.

The respondents answered 18 survey questions which were collated and then transferred into reportable elements with totals, averages and divisions based upon the size of the organization, the location of the organization, the industry and the role the respondent played within the organization.

Read our report, *The Innovation vs. Technical Debt Tug of War*, [here](#).

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